
PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Eliminate Gravel Push-Up Dams On Lower North Fork John Day

BPA project number: 9801700

Contract renewal date (mm/yyyy): 5/1999 ☐ Multiple actions?

Business name of agency, institution or organization requesting funding

North Fork John Day Watershed Council

Business acronym (if appropriate) NFJDWC

Proposal contact person or principal investigator:

Name	Robert Stubblefield
Mailing Address	P.O. Box 95
City, ST Zip	Monument, OR 97864
Phone	541-934-2141
Fax	541-934-2312
Email address	waterguy@transport.com

NPPC Program Measure Number(s) which this project addresses

7.7, 7.10, 10.2

FWS/NMFS Biological Opinion Number(s) which this project addresses

Other planning document references

"Wy Kan Ush Mi Wa Kish Wit --Volume II Subbasin Plans"-- Recommended Habitat Enhancement Action for John Day Subbasin: II. Instream Flow & Passage A. Instream Flows Enhancement . . . Implement more efficient irrigation methods and water conservation practices benefitting landowners and instream flows. III A. Watershed Management . . . Reduce sediment from agricultural practices . . ." (page 40). When addressing significant water quality parameters in the Snake River Basin (a basin with many climatical and geographical similarities to the John Day Basin) the "Oregon Plan Supplement on Steelhead" states: "Temperature is the most significant parameter . . . Sediment is also of significant concern . . . Other parameters of concern include . . . flow modification" (page 7). Landowners have agreed to in-kind contributions and limited cost-sharing. Monument High School's SWET (Student Watershed Enhancement Team) will monitor water quality throughout each phase of the project.

Short description

Modify irrigation pumping stations by replacing above-ground suction screens with sub-surface collectors. Eliminate flow modification, migration impediments, and vegetation disruption and destruction inflicted during construction of gravel push-up dams.

Target species

Chinook Salmon, Summer Steelhead, Resident Rainbow

Section 2. Sorting and evaluation

Subbasin

John Day

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input checked="" type="checkbox"/> Anadromous fish <input checked="" type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input checked="" type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input type="checkbox"/> Operation & maintenance <input checked="" type="checkbox"/> New construction <input checked="" type="checkbox"/> Research & monitoring <input type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1998	Installation of River Meadows permanent pumping station.	
1998	Installation of Schultz Ranch permanent pumping station.	

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Remove barriers to anadromous fish migration.	a	Remove any existing push-up gravel dams
2	Eliminate the need for push-up gravel dams.	a	Install permanent pumping stations and/or infiltration galleries.
3	Increase irrigation efficiency	a	Compute annual pumping costs before and after installation of infiltration galleries and/pr establishment of permanent pumping stations.
		b	Compute annual construction costs of push-up dams.
4	Decrease Evaporation	a	Minimize surface area of water and eliminate large, shallow, pooled areas created by gravel push-up dams.
5	Reestablish riparian vegetation in areas degraded by push-up dam construction.	a	Plant native trees, grasses and shrubs and install riparian fencing to ODFW specification.
6	Broaden landowner participation annually	a	Maintain and enhance working relationships and meet regularly with participating and potentially participating landowners.
7	Eliminate pooled area which may be potential heat source into surrounding water.	a	Monitor water temperature and compare temperature of dammed pools vs free-flowing sections of river.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	7/2000	8/2001			5.00%
2	7/2000	8/2001			68.00%
3	5/2000	12/2001			5.00%
4	7/2000	10/2001			10.00%
5	10/2000	10/2001			10.00%
6	1/2000	12/2001			0.00%
7	7/2000	12/2001			2.00%
				Total	100.00%

Schedule constraints

All instream work must be completed within ODFW and DSL instream work period (July 15-August 31 on lower North Fork John Day).

Completion date

12/2001

Section 5. Budget

FY99 project budget (BPA obligated): \$66,500

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel	North Fork John Day Watershed Council Coordinator and Monument SWCD Monitoring Coordinator	% 16	15,000
Fringe benefits			
Supplies, materials, non-expendable property		% 38	35,000
Operations & maintenance	Water quality monitoring and cleaning/flushing of systems previously installed.	% 11	10,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)			
NEPA costs			
Construction-related support			
PIT tags	# of tags:		
Travel		% 0	750
Indirect costs		% 2	2,000
Subcontractor	Includes construction cost and Certified Water Rights Examiner survey to change points of diversion.	% 27	25,000
Subcontractor			
Other	Outside consulting	% 2	2,500
TOTAL BPA FY2000 BUDGET REQUEST			\$90,250

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
North Fork John Day Watershed Council	Labor, monitoring equipment	% 14	17,920
Monument SWCD	Clerical, accounting, and office support.	% 2	2,500
Confederated Tribes of the Warm Springs	Technical assistance	% 0	1,000
NRCS	Engineering, Technical assistance	% 2	2,500
ODFW	Technical assistance, screening	% 1	2,000
Landowners	Labor and construction equipment	% 3	4,500
BLM	Cultural Resource Inventories	% 2	3,000
Total project cost (including BPA portion)			\$123,670

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	\$140,000			

Section 6. References

Watershed?	Reference
<input type="checkbox"/>	Wy-Kan-Ush-Mi-Wa-Kish-Wit Spirit of the Salmon: The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes, Columbia River Inter-Tribal Fish Commission, Portland, Oregon.
<input type="checkbox"/>	The Oregon Plan Supplement on Steelhead, Oregon Plan, Capitol Building, Salem, Oregon.
<input type="checkbox"/>	Monument SWCD Annual Work Plan, Monument SWCD, Monument, Oregon.
<input type="checkbox"/>	Healthy Native Stocks of Anadromous Salmonoids in the Pacific North West and California, Huntington, Nehlsen, and Bowers, Oregon Trout, 1994, Portland, Oregon.
<input type="checkbox"/>	

PART II - NARRATIVE

Section 7. Abstract

The goal of this project is the elimination of gravel push-up dams on the lower North Fork John Day over the next three years. Elimination of push-up dams will remove impediments to anadromous (Spring Chinook salmon, Summer Steelhead trout) fish migration, improve water quality and habitat for both anadromous and resident fish, reduce sediment load from construction and washouts, and shrink surface area of water during annual periods of highest temperatures and solar radiation. Installation of infiltration galleries in other subbasins of the John Day has been successful both scientifically and aesthetically. Water quality will be monitored throughout each phase of the project with turbidity and temperature as the primary criteria. Landowner participation and satisfaction is also a primary criterion for success of the project. The North Fork John Day Watershed Council will begin eliciting landowner participation and support in January of 1998 with the goal of removing four push-up dams from the Wall Creek--Kimberly reach annually through 2001. Monitoring of water quality and landowner satisfaction will continue through and beyond December of 2001.

Section 8. Project description

a. Technical and/or scientific background

Gravel push-up dams represent impediments to anadromous fish, resident fish, and human recreational use. Hastily-constructed and ill-conceived push-up dams within the John Day Basin have received statewide attention, have been frequently photographed and described as "eyesores." There are over 40 pumping stations located on the lower North Fork John Day between Kimberly and the mouth of Wall Creek (a 20-mile reach). Fully one half of these pumping stations require some degree of instream flow modification during periods of low flow. These modifications collectively result in numerous migration impediments, large pools of standing water, and increased sediment loads both during construction and washout.

"Wy Kan Ush Mi Wa Kish Wit --Volume II Subbasin Plans"-- Recommended Habitat Enhancement Action for John Day Subbasin: II. Instream Flow & Passage A. Instream Flows Enhancement . . . Implement more efficient irrigation methods and water conservation practices benefitting landowners and instream flows. III A. Watershed Management . . .Reduce sediment from agricultural practices . . ." (page 40). When addressing significant water quality parameters in the Snake River Basin (a basin with many climatic and geographical similarities to the John Day Basin) the "Oregon Plan Supplement on Steelhead" states: "Temperature is the most significant parameter . . .Sediment is also of significant concern . . .Other parameters of concern include . . .flow modification" (page 7).

Many push-up dams remain instream until they are washed out during spring runoff. These washouts result in exponential increases in turbidity and erosive capability. Although the usefulness of push up dams is short-term, the damage to the watershed is long-term.

This project will monitor water temperature in the pools behind push-up dams to determine if these constructs acts as "heat sinks," which eventually release warmer water into the free-flowing stream. Temperature degradation on the reach of the North Fork between Wall Creek and Kimberly can best be improved by enhancing tributary flows, increasing riparian vegetation, and removing obstructions which result in broad, shallow pools. This project addresses the latter of these components--the component which has received the least attention, yet is most quickly and easily improved.

b. Rationale and significance to Regional Programs

The removal of push-up dams and replacement with infiltration galleries has been a successful program on both the upper and lower section of the John Day River. Sediment and temperature concerns along the lower North Fork John Day have not been significantly addressed.

The majority of the riparian areas along the North Fork John Day are bordered by hay fields. Overgrazing is a primary concern only along isolated segments of the Monument-Kimberly reach. Instream and riparian disturbance caused during the construction of push-up dams is the most efficiently altered limiting factor to water quality.

The Monument SWCD 1997-98 work plan outlines "improving water quality in the North Fork of the John Day River Basin" as its number one goal for the ensuing year. Goal #10 specifically states "develop planning projects which address . . . push-up dams for irrigation withdrawals . . . Re-establishment of riparian vegetation in critical areas."

This project is specific both in geographic area and objectives. Results can be efficiently monitored, recorded, and stored. The criteria for success is specific and readily discernible. The project has broad-based and diverse support locally and regionally from both private and public interests, including private landowners, schools, and agencies. The project utilizes Coordinated Habitat Planning as outlined in section 7 of the Fish and Wildlife Program. There is broad based collaboration between public and private interests and the project is part of a locally adopted watershed action plan (7.6C--F&WP). The elimination of push-up dams directly address sediment and water quality which are listed as Habitat Objectives under the Fish and Wildlife Program (7.6D).

c. Relationships to other projects

(Replace this text with your response in paragraph form)

d. Project history (for ongoing projects)

Nineteen ninety-eight was the first year of the North Fork John Day Watershed Council's Eliminate Gravel Push-up Dams on Lower North Fork John Day project. Two push-up dams (River Meadows and Schultz Ranches) were replaced by permanent pumping stations. A third project is currently underway and is not subject to the instream work window. Completion is anticipated during the current contract. Landowner participation and enthusiasm for replacing push-up dams has increased beyond initial projections. Portions of the River Meadows and Schultz Ranches projects which do not involve instream work are yet to be completed, but will be finished prior to the beginning of the 1999 irrigation season. Water quality data is currently being compiled and evaluated.

e. Proposal objectives

- 1--Removal of barriers to anadromous fish migration.
- 2--Eliminate the need for any future gravel push-up dams.
- 3--Increase irrigation efficiency.
- 4--Shrink area of surface water and decrease evaporation during periods of highest solar radiation.
- 5--Reestablish and protect riparian vegetation in areas degraded by push-up dam construction.
- 6--Broaden landowner participation annually.

7--Eliminate pooled area which may be potential heat source into surrounding water.

f. Methods

Participating landowners will be encouraged not to construct push-up dams. If needed, assistance will be offered to reach a sufficient water source in the short term until the permanent pumping station is completed.

Infiltration galleries will be installed by using sub-surface collection tubes varying in size from 20-40' in length and 12-18" inches in diameter. The number of tubes and the size of the tubes will be determined by the composition of aggregate and the supply of and demand for water. The tubes will flow into vertical culverts, which will again vary in size (minimum of 3' in diameter) based on supply and demand of irrigation water. Each project will be engineered on a site-specific basis to insure cost-effectiveness and success.

Annual pumping costs for participating landowners will be averaged for four years preceding the project and compared to pumping costs of each year following the project. The cost of construction of push-up dams will also be computed and subtracted from the pumping costs following the project.

It is assumed water quality will be improved in a number of parameters by the removal of push-up dams. Water quality will be carefully and consistently monitored throughout and beyond the life of the project. A decrease in summer temperatures and year-round decrease of sediment and turbidity are expected outcomes.

There will be minimal streambed and riparian disruption during the construction phase of the project. Any disruption or destruction will be rehabilitated and will be minimal compared to the damage caused during unsupervised and unmonitored construction of push-up dams.

Guided tours will be conducted by the North Fork Watershed Council and Monument SWCD in order to make landowners throughout the John Day Basin and North Fork subbasin aware of project benefits.

g. Facilities and equipment

The North Fork Watershed Council will provide day-to-day supervision and implementation of the project out of the Council's Monument office. Clerical work will be provided by the Monument SWCD which has staff in place.

Engineering, materials, and technical support will be provided by Columbia Power Co-op.

Technical assistance and engineering will be provided by NRCS, ODFW, and the John Day Basin Office of The Confederated Tribes of the Warm Springs.

Water quality monitoring will be provided by Monument High School's SWET program. StowAway data loggers, Hach DRL 2000 test kits, and the computer capability to store the data are already in place at Monument High School. They will monitor conductivity, turbidity, and temperature. The Monument High School SWET program has been doing this type of monitoring since 1994 and has cooperated and collaborated with a diverse range of groups including ODFW, USFS, BLM, private ranchers and landowners, and Prairie Wood Products.

Construction and equipment will be supplied, or contracted by, participating landowners.

The Monument SWCD nursery will provide native trees and plants to rehabilitate areas long degraded from construction of push-up dams and to repair any disruption caused during the installation of infiltration galleries. The planting and replanting will be a largely volunteer effort coordinated by the North Fork Watershed Council and Monument SWCD.

h. Budget

The North Fork John Day Watershed council relies on support from a variety of sources including GWEB, the Monument SWCD, and various private foundations. The amount requested will help ensure staff remains in place to administer the Eliminate Gravel Push-up Dams on Lower North Fork John Day project. Supplies and materials are based on past costs and future projections for site specific solutions. The cost of installing permanent pumping stations can vary greatly from site to site based on engineering specifications and problems encountered during the development phase.

Water quality monitoring is an essential component of all projects undertaken and administered by the North Fork John Day Watershed Council. This funding will help ensure current staffing levels are maintained for monitoring.

Most installations involve relocation of the pumping site. Each time the point of diversion is changed a Certified Water Rights Examiner must conduct the survey. The North Fork John Day Watershed Council is currently drafting a document to present in cooperation with other participating agencies requesting waiver of the CWRE on restoration/conservation projects upon the recommendation of the Watermaster. Travel costs consist of mileage reimbursement for usage of private vehicles by North Fork John Day Watershed Council personnel and attendance of meetings and workshops involving administration of project. Outside consulting costs are minimal as most technical assistance required is provided by participating agencies. All cost sharing is secured.

Section 9. Key personnel

Jack Cavender
P.O. Box 405
Monument, OR 97864
Phone:541-934-2432

Project Involvement

As Chairman of the North Fork John Day Watershed Council, I will be directly involved in planning and implementing the project from its conception to completion. The problem of irrigation withdrawals that require annual instream work has existed for years and has an adverse effect on water quality and, in some cases, riparian ecology.

Education

1939-1943 Oregon State College (University): Corvallis, Oregon
B.S.--Agriculture

Additional credits earned toward certification for Vo-Ag teaching.

Work History

1949-1957 Vo-Ag Instructor (Adult Education)
Monument School District: Monument, Oregon
Provided classroom and instruction under the GI Bill

1990-1997 Chairman, Monument Soil and Water Conservation District

1995-1997 Chairman, North Fork John Day Basin Watershed Council

1957-1997 Irrigation Engineer, Columbia Power Cooperative Assn:
Monument, Oregon

1949-1997 Ranch Owner and Operator, Self-Employed, Monument, Oregon

Comments

While I am of retirement age, I continue to be active in conservation work and do consulting for Columbia Power Cooperative Assn. on irrigation design and implementation problems. I also manage the Monument SWCD Plant Materials Nursery in partnership with the North Fork John Day Watershed Council and Monument School. Coordinated Resource Management Planning (CRMP) is incorporated in most projects.

RONALD E. GAITHER
Star Rt. 1
Kimberly, OR 97848
541-987-2370

Current Status: Science teacher: Monument HS

Education: M.S. Rangeland Resources; Oregon State University (1980)

B.S. Range Management/Wildlife Ecology; University of Florida (1977)

Forest Technician Certificate; Lake City Forest Ranger School, FL (1967)

Teaching Certificates: Standard Biology; Oregon State University (1980)
Basic Integrated Science; Oregon State University (1980)
Basic Elementary; Eastern Oregon State College (1983)

Teaching Experience:

1987-present Science Teacher, Monument Schools (7-12)
Biology, Chemistry, Physical Science, Earth Science, Astronomy, Oceanography, Health, Statistics, Natural Resources

1989-1990 Instructor with OMSI Young Scholars Fisheries Research Team. Taught fisheries research techniques in the John Day Basin in 6-week programs funded by the National Science Foundation and in cooperation with OSU professors.

1984-1987 Classroom Teacher, Monument Schools, Grades 7-8

1980-1984 Classroom Teacher, Monument Schools, Grades 5-6

Affiliations Oregon Science Teachers Association
Oregon Trout

Publications: Buckhouse, J.C. and R.E. Gaither. 1982. Potential sediment production within various vegetative communities found in the Blue Mountains of Oregon. J. Soil and Water Cons. 37:120-122

Gaither, R.E. and J.C. Buckhouse. 1981. Comparing a high intensity simulated rainfall to theoretically characteristic storms within the Range Validation Study Area. In: Proc. Oregon Academy of Science. 17:10-15.

Gaither, R.E. and J.C. Buckhouse. 1981. Hydrologic outputs from woodland, shrubland, and grassland, ecosystems in relation to grazing management strategies: An annotated bibliography. Oregon State Univ. Agr. Exp. Sta. Spec. Rep. 640. 26 pp.

Gaither, R.E. and J.C. Buckhouse. 1983. Infiltration rates of various vegetative communities within the Blue Mountains of Oregon. *J. Range Manage.* 36:58-60.

BLAINE HOY

P.O Box 93
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PROFESSIONAL EXPERIENCE:

1998 - Present **MONUMENT SOIL and WATER CONSERVATION DISTRICT**

Water Quality Monitoring Coordinator

Expand local high school initiated program throughout the John Day River Basin. Collect data and develop a repository of water quality data for the entire basin.

1996 - 1997 **WESTERN OREGON STATE COLLEGE, Monmouth, Oregon**

Lecturer

Instructed classes in Physical Geography, Geography of the Pacific Northwest, and Environmental Conservation.

1994 - 1996 **OREGON STATE UNIVERSITY, Corvallis, Oregon**

Graduate Teaching Assistant/Instructor

Taught Environmental Conservation to juniors, seniors and graduate students. Prepare lesson plans, lecture, correct assignments, assign grades to 75 students each quarter. Recitation lab instructor for Geography of the Non-Western World. Conducted classes, monitored and graded assignments and term papers. Prepared an Environmental Assessment of Camp Adair for expanded use of the site.

1978 - 1994 **US AIR FORCE**

International Politico-Military Affairs Officer

Coordinated US security initiatives and implementation of US-Japan defense policy with Japanese Government Agencies (Ministry of Foreign Affairs and Japan Defense Agency), US Embassy, DOD and US military components in Japan. Prepared input for senior level bilateral security meetings, congressional testimony and other security related fora. Project officer for Host Nation Support Program, the most successful program in DOD.

Chief, Minuteman Operations Branch and Chief, Crew Management Branch

Performed coding operations for launch facilities and control centers. Instructed code handlers on all phases of coding operations. Supervised crew scheduling and monitored crew training compliance.

Flight Commander

Instructed officer candidates in officership, management, written and oral communication skills, and other areas related to officership in the Air Force. Prepared lesson plans, evaluated performance and recommended students for commissioning as officers in the US Air Force.

Chief, Training Analysis Branch

Performed duties as Launch Control Officer, Combat Crew Commander, Combat Crew Instructor, and Chief of the Training Analysis Branch of the Crew Training Division.

EDUCATION:

Oregon State University - (M.S. complete in Spring 1999), Environmental Geography

Webster University - M.A., Business Administration

Fordham University - B.A., History

Robert Stubblefield
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Monument, OR 97864
541-934-2134

Current Status: Coordinator: North Fork John Day Watershed Council

Education: B.A. English, Eastern Oregon State University, 1992
M.F.A., Creative Writing, University of Montana, 1994

Work History Teaching Assistant, English Department, University of Montana
1992-1994.

Editor, *Oregon East*, 1990-92

Sports Reporter, *Clackamas Print*, 1988-90

Stubblefield family farm, 1980-88

Relevant Publications: “Weight”, *Left Bank*, *Writing and Fishing the Northwest*,
1991

Section 10. Information/technology transfer

Water quality data will be monitored throughout and beyond the completion of the project. Data will be stored at Monument High School and made available to landowners, agencies, and any interested parties. Data will also be available for classroom study at Monument, Long Creek, and Ukiah high schools (the three schools within the North Fork Watershed). Monument High School's SWET program has been the subject of segments on OPB's "Oregon Field Guide" and KPTV's "One Oregon." The SWET program is an unqualified success with a proven track record of monitoring similar projects.

The North Fork John Day Watershed Council will use the elimination of gravel push-up dams as a pilot project and provide photographs and documentation of the scientific and aesthetic successes and failures of the program. This information will be distributed and open to scrutiny during the quarterly watershed improvement workshops held by the North Fork John Day Watershed Council.

The North Fork John Day Watershed Council will highlight the project during volunteer tree planting drives and also conduct and lead guides for agencies, individuals, and environmental groups during annual Monument SWCD meetings. The North Fork Watershed Council, Monument SWCD, Monument High School, Confederated Tribes of the Warm Springs, and Oregon Department of Fish and Wildlife cooperate in guided tours and volunteer projects involving high schools and youth organizations statewide. Ukiah and Long Creek high schools will participate in water quality monitoring.

Congratulations!